

**WHAT IS CLAIMED IS:**

- 1           1.   An interference cancellation (IC) method  
2   comprising the steps of:  
3           receiving signals from at least two users, said  
4   received signals forming respective signal data streams;  
5   and  
6           performing an interference cancellation (IC) process  
7   on a given portion of each of said signal data streams,  
8   each said given portion being within a common window,  
9   whereby respective interference between each of said  
10   respective data streams is minimized.
- 1           2.   The method according to claim 1, further  
2   comprising, upon completion of said performing step, the  
3   step of shifting said common window to another portion of  
4   said signal data streams.
- 1           3.   The method according to claim 2, wherein said  
2   common window has a given window size, said method  
3   further comprising the step of modifying, after said step  
4   of shifting, said given window size.

1           4.    The method according to claim 2, wherein said  
2    step of shifting further comprises the step of:  
3           shifting said common window by a full window length.

1           5.    The method according to claim 2, wherein said  
2    step of shifting further comprises the step of:  
3           shifting said common window by a fractional window  
4    length.

1           6.    The method according to claim 1, wherein said  
2    step of performing is repeated a plurality of times on  
3    said given portion of said respective signal data  
4    streams, within said common window.

1           7.    The method according to claim 1, wherein said  
2    common window has a constant window size.

1           8.    The method according to claim 1, wherein said  
2    respective signal data streams comprise symbols therein.

1           9. The method according to claim 1, further  
2 comprising the step of:

3           determining, at the end of said common window, at  
4 least one symbol within at least one of said respective  
5 signal data streams, said at least one symbol extending  
6 outside said common window, wherein, in said step of  
7 performing, said IC process processes said at least one  
8 symbol.

1           10. An interference cancellation apparatus in a  
2 telecommunication system, said apparatus comprising:

3           receiving means for receiving signals from at least  
4 two users, said received signals forming respective  
5 signal data streams; and

6           performing means for performing an interference  
7 cancellation (IC) process on a given portion of each of  
8 said signal data streams, each said given portion being  
9 within a common window, whereby respective interference  
10 between each of said respective signal data streams is  
11 minimized.

1           11. The apparatus according to claim 10, further  
2           comprising shifting means for shifting, upon completion  
3           of said performing means, said common window to another  
4           portion of said signal data streams.

1           12. The apparatus according to claim 11, wherein  
2           said shifting means shifts said common window by a full  
3           window length.

1           13. The apparatus according to claim 11, wherein  
2           said shifting means shifts said common window by a  
3           fractional window length.

1           14. The apparatus according to claim 10, wherein  
2           said performing means further comprises repeating means  
3           for repeating said IC process a plurality of times on  
4           said given portion of said respective signal data  
5           streams, within said common window.

1           15. The apparatus according to claim 10, wherein  
2       said common window has a given window size, said  
3       apparatus further comprising modifying means for  
4       modifying said given window size.

1           16. The apparatus according to claim 10, wherein  
2       said respective signal data streams comprise symbols  
3       therein.

1           17. The apparatus according to claim 10, further  
2       comprising:

3           determining means for determining, at the end of  
4       said common window, at least one symbol within at least  
5       one signal data stream, said at least one symbol  
6       extending outside said common window, wherein said  
7       performing means performs said IC process on said at  
8       least one symbol.

1           18. A wireless telecommunications system comprising:  
2           a receiver for receiving signals from at least two  
3           users, said received signals forming respective signal  
4           data streams; and  
5           a processing unit for performing an Interference  
6           Cancellation (IC) process on a given portion of each of  
7           said signal data streams, each said given portion being  
8           within a common window, whereby respective interference  
9           between each of said respective signal data streams is  
10          minimized.

1           19. The system according to claim 18, further  
2           comprising a memory unit connected to said receiver for  
3           storing said respective signal data streams thereon, said  
4           memory unit being coupled to said processing unit.

1           20. The system according to claim 19, wherein said  
2           memory unit comprises a buffer memory, said processing  
3           unit performs said IC process on said respective signal  
4           data streams in said buffer memory.

1           21. The system according to claim 18, wherein said  
2 processing unit further comprises a repeater for  
3 repeating said IC process a plurality of times on the  
4 respective given portions of said respective signal data  
5 streams within said common window.

1           22. The system according to claim 18, wherein said  
2 processing unit further comprises a shifter for shifting  
3 said common window to another portion of said respective  
4 signal data streams.

1           23. The system according to claim 18, further  
2 comprising a determiner for determining, at the end of  
3 said common window, at least one symbol within said  
4 signal data streams, said at least one symbol extending  
5 outside said common window, wherein said performing means  
6 performs said IC process on said at least one symbol.

1           24. A memory storage device for storing a data  
2 structure therein, said memory storage device comprising:

3           (a) receiving means for receiving data;

4           (b) performing means for performing an interference  
5 cancellation (IC) process on a portion of said received  
6 data, said IC process processing said portion within a  
7 window; and

8           (c) shifting means for shifting said window.

1           25. The memory storage device according to claim  
2 24, wherein said performing means repeats said IC process  
3 on said portion of said received data within said window  
4 a plurality of times.

1           26. The memory storage device according to claim  
2 24, wherein said shifting means shifts said window by a  
3 full window length,



1           27. The memory storage device according to claim  
2       24, wherein said shifting means shifts said window by a  
3       partial window length.

1           28. The memory storage device according to claim 24,  
2       wherein said received data comprise symbols therein.

1           29. The memory storage device according to claim  
2       24, further comprising:

3           determining means for determining, at the end of  
4       said window, at least one symbol within said received  
5       data, said at least one symbol extending outside said  
6       window, wherein said performing means performs said IC  
7       process on said at least one symbol.